



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
(304) 926-0450
(304) 926-0452 fax

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

October 29, 2014

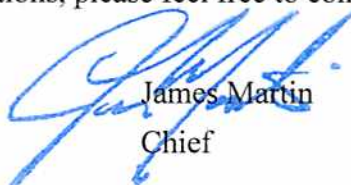
WELL WORK PERMIT
Rework-Secondary Recovery

This permit, API Well Number: 47-3303956, issued to HG ENERGY, LLC, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.



James Martin
Chief

Operator's Well No: J.W. DENNISON 15
Farm Name: ROACH, GLENNA

API Well Number: 47-3303956

Permit Type: Rework-Secondary Recovery

Date Issued: 10/29/2014

Promoting a healthy environment.

PERMIT CONDITIONS

West Virginia Code §22-6-11 allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code §22-6-20, which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
2. Pursuant to 35 CSR 4-19.1.a, at the request of the surface owner all water wells or springs within 1000 feet of the proposed well that are actually utilized for human consumption, domestic animals or other general use shall be sampled and analyzed.
3. Pursuant to 35 CSR 4-19.1.c, if the operator is unable to sample and analyze any water well or spring with one thousand (1,000) feet of the permitted well location, the Office of Oil and Gas requires the operator to sample, at a minimum, one water well or spring located between one thousand (1,000) feet and two thousand (2,000) feet of the permitted well location.
4. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
5. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.
6. During the surface casing and cementing process, in the event cement does not return to the surface, or any other casing string that is permitted to circulate cement to the surface and does not return to the surface, the oil and gas inspector shall be notified within twenty-four (24) hours.
7. Well work activities shall not constitute a hazard to the safety of persons.
8. Operator shall provide the Office of Oil & Gas notification of the date that drilling commenced on this well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov within 30 days of commencement of drilling.

FORM WW-3 (B)
1/12



1) Date: 09/19/2014
2) Operator's Well No. J W Dennison 15
3) API Well No.: 47 - Harrison - 3956
State County Permit
4) UIC Permit No. UIC2R03301AP

STATE OF WEST VIRGINIA
NOTICE OF LIQUID INJECTION OR WASTE DISPOSAL WELL WORK PERMIT APPLICATION
FOR THE DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

5) WELL TYPE: Liquid Injection ☒ / Gas Injection (not storage) ☐ / Waste Disposal ☐
6) LOCATION: Elevation: 1409' Watershed: Rush Run
District: Tenmile 9 County Harrison Quadrangle Wolf Summit 7.5' 692
7) WELL OPERATOR: HG Energy, LLC 8) DESIGNATED AGENT Diane White
Address 5260 Dupont Road Address 5260 Dupont Road
Parkersburg, WV 26101 Parkersburg, WV 26101
9) OIL & GAS INSPECTOR TO BE NOTIFIED 10) DRILLING CONTRACTOR
Name Sam Ward Name To be Determined Upon Approval of Permit
Address P.O. Box 2327 Address
Buckhannon, WV 2601
11) PROPOSED WELL WORK Drill ☐ / Drill deeper ☐ / Redrill ☐ / Stimulate ☒
Plug off old formation ☐ / Perforate new formation ☐ Convert ☐
Other physical change in well (specify)
12) GEOLOGIC TARGET FORMATION Fifth Sand Depth 2858 Feet (top) to 2878 Feet (bottom)
13) Estimated Depth of Completed Well, (or actual depth of existing well): 2961 Feet SDW
14) Approximate water strata depths: Fresh 440 Feet Salt 1170 Feet 9/29/2014
15) Approximate coal seam depths: 497'
16) Is coal being mined in the area? Yes No
17) Virgin reservoir pressure in target formation 60 psig Source Estimated
18) Estimated reservoir fracture pressure 1200 psig (BHFP)
19) MAXIMUM PROPOSED INJECTION OPERATIONS: Volume per hour 25 bbl/hr Bottom hole pressure 2400 psi
20) DETAILED IDENTIFICATION OF MATERIALS TO BE INJECTED, INCLUDING ADDITIVES Fresh water, produced
water, bactericides
21) FILTERS (IF ANY) Cartridge filters and/or coal bed filters
22) SPECIFICATIONS FOR CATHODIC PROTECTION AND OTHER CORROSION CONTROL

23) CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL -UP OR SACKS (CU. FT.)	PACKERS
	Size	Grade	Weight per ft.	New	Used	For Drilling	Left In Well		
Conductor									Kinds
Fresh Water	8 5/8"	R-3	20#	X		574'	574'	Use Existing Casing	
Coal									Sizes
Intermediate									2.375"x4.5"
Production	4 1/2"	J-55	10.5#	X		2929'	2929'	Use Existing Casing	Depths set
Tubing	2 3/8"	J-55	4.6#	X		2750'	2750'	150 sks	2650'
Liners									Perforations
									Top 2966' Bottom 2968'

24) APPLICANT'S OPERATING RIGHTS were acquired from John W. Dennison, et ux
by deed / lease x / other contract / dated 09/19/2014 of record in the
Harrison County Clerk's office in Lease Book 92 Page 118

State of West Virginia
Division of Environmental Protection
Section of Oil and Gas

Well Operator's Report of Well Work

Farm name: ROACH, GLENNA

Operator Well No.: J.W.DENNISON#15

LOCATION: Elevation: 1,409.00 Quadrangle: WOLF SUMMIT

District: TENMILE

County: HARRISON

Latitude: 14600 Feet South of 39 Deg. 20Min. Sec.

Longitude 1350 Feet West of 80 Deg. 27 Min. 30 Sec.

Company: PENNZOIL PRODUCTS COMPANY

P. O. BOX 5519

VIENNA, WV 26105-5519

Agent: JAMES A. CREWS

Inspector: TIM BENNETT

Permit Issued: 08/23/93

Well work Commenced: 12/13/94

Well work Completed: 04/07/95

Verbal Plugging

Permission granted on:

Rotary ☒ Cable ☐ Rig

Total Depth (feet) 2961'

Fresh water depths (ft) N/A

Salt water depths (ft) N/A

Is coal being mined in area (Y/N)? N

Coal Depths (ft): 497'-504'

Casing & Tubing	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
Size			
8-5/8"	574'	574'	180 sks.
4-1/2"	2929'	2929'	150 sks.

OPEN FLOW DATA * Water Injection Well

Producing formation Fifth Sand Pay zone depth (ft) 2858-2878
 Gas: Initial open flow * MCF/d Oil: Initial open flow * Bbl/d
 Final open flow * MCF/d Final open flow * Bbl/d
 Time of open flow between initial and final tests * Hours
 Static rock Pressure * psig (surface pressure) after * Hours

Second producing formation Pay zone depth (ft)
 Gas: Initial open flow MCF/d Oil: Initial open flow Bbl/d
 Final open flow MCF/d Final open flow Bbl/d
 Time of open flow between initial and final tests Hours
 Static rock Pressure psig (surface pressure) after Hours

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

For: PENNZOIL PRODUCTS COMPANY

By:

Date: May 1, 1995

Timothy P. Roush

TREATMENT

Perforated Fifth Sandstone with 12 holes from 2866'-2868' K.B. Fractured with 300 gallons 15% HCL, 142 bbls. gelled water and 5000 lbs. 20/40 sand.

WELL LOG

Sand and Shale	0'- 497'
Coal (Pittsburgh Coal)	497'- 504'
Sand w/Shale Streaks	504'- 588'
Shale	588'- 663'
Sand	663'- 682'
Shale with Sand Streaks	682'- 922'
Sand	922'-1050'
Shale w/Sand Streaks	1050'-1190'
Sand	1190'-1306'
Shale	1306'-1419'
Sand	1419'-1545'
Shale	1545'-1632'
Sand	1632'-1688'
Shale	1688'-1837'
Limestone (Little Lime)	1837'-1854'
Shale (Pencil Cave)	1854'-1883'
Limestone (Big Lime)	1883'-1949'
Sandstone (Big Injun)	1949'-2018'
Shale	2018'-2440'
Sand (Fifty Foot)	2440'-2455'
Shale w/Sand Streaks	2455'-2519'
Sand (Thirty Foot)	2519'-2531'
Shale w/Sand Streaks	2531'-2635'
Sand (Gordon)	2635'-2678'
Shale	2678'-2685'
Sand (Fourth)	2685'-2708'
Shale	2708'-2858'
Sand (Fifth)	2858'-2878'
Shale	2878'-2966'
T.D. Loger:	2966' KB
T.D. Driller:	2961' KB

Received
Office of Oil & Gas
26181
OCT 06 2014

3303956SW

7012 3460 0002 6850 6286

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Sent To: David Romano
Street, Apt. No., or PO Box No. 343 Washington Ave
City, State, ZIP+4 Clarksburg WV 26301

PS Form 3800, August 2006 See Reverse for Instructions

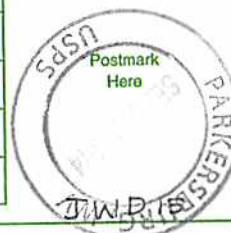


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Total Postage & Fees	\$ 7.61

Sent To: Wolf Run Mining Comp
Street, Apt. No., or PO Box No. 2708 Cranberry Sq
City, State, ZIP+4 Morgantown WV 26505

PS Form 3800, August 2006 See Reverse for Instructions



Page 118 of
API Number 47 - 033 - 3956
Operator's Well No. J W Dennison 15

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

CONSTRUCTION AND RECLAMATION PLAN AND SITE REGISTRATION APPLICATION FORM
GENERAL PERMIT FOR OIL AND GAS PIT WASTE DISCHARGE

Operator Name HG Energy, LLC OP Code 494497948

Watershed Rush Run Quadrangle Wolf Summit 7.5'

Elevation 1409' County Harrison District Tenmile

Description of anticipated Pit Waste: Fluids encountered when stimulating subject well

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes _____ No X

Will a synthetic liner be used in the pit? Yes. If so, what mil.? 20

Proposed Disposal Method For Treated Pit Wastes:

- x Land Application

 Underground Injection (UIC Permit Number _____)

 Reuse (at API Number _____)

 Off Site Disposal (Supply form WW-9 for disposal location)

 Other (Explain _____)

Drilling medium anticipated for this well? Air, freshwater, oil based, etc. NA

-If oil based, what type? Synthetic, petroleum, etc. _____

Additives to be used? Water, soap, KCl

Will closed loop system be used ?

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Leave in pit

-If left in pit and plan to solidify what medium will be used? Cement, lime, sawdust Native soil, cement, lime

-Landfill or offsite name/permit number? _____

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature _____

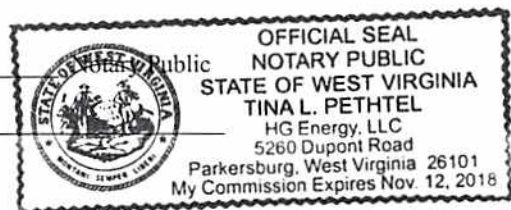
Company Official (Typed Name) HG Energy, LLC

Company Official Title	Agent
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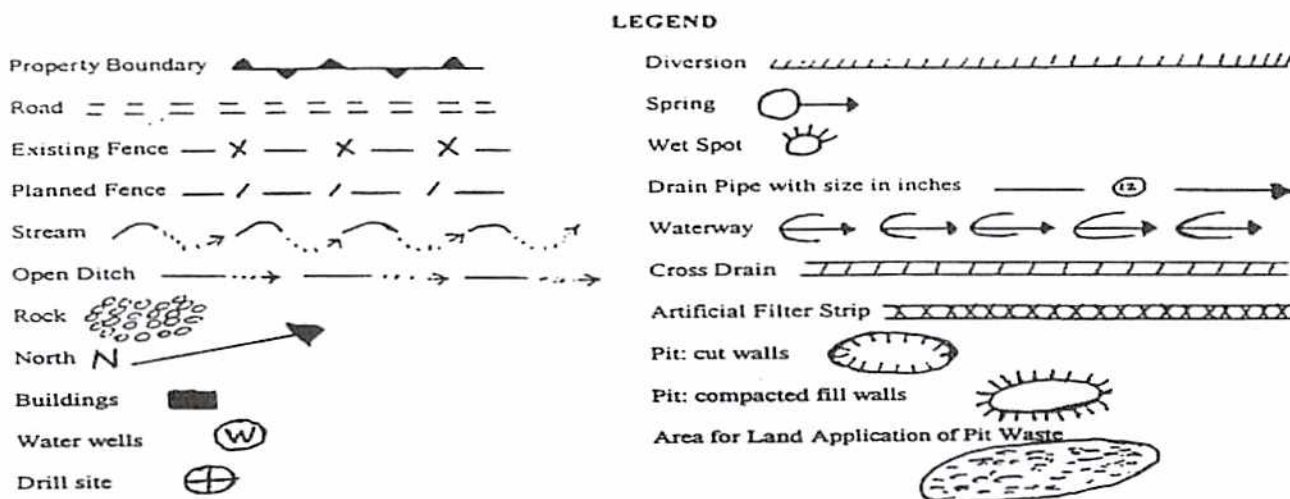
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OCT 06 2014

Subscribed and sworn before me this 19 day of September, 2014

My commission expires NOV 12 2018



Form WW-9

Operator's Well No. JW Dennison 15Proposed Revegetation Treatment: Acres Disturbed 0.5 acres Prevegetation pH _____Lime 2 Tons/acre or to correct to pH 6.5Fertilizer (10-20-20 or equivalent) 500 lbs/acre (500 lbs minimum)Mulch Straw 5 Tons/acre

Seed Mixtures

Seed Type	Area I	lbs/acre	Seed Type	Area II	lbs/acre
Tall Fescue		40	Tall Fescue		40
Ladino Clover		5	Ladino Clover		5

Attach:

Drawing(s) of road, location, pit and proposed area for land application.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: S. J. O'Ward

Comments: _____

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Office of Oil & Gas
OCT 06 2014

Title: Oil & Gas InspectorDate: 9/29/2014Field Reviewed? (Harrison) Yes (X) No

Reclamation Plan For: J.W. Dennison No. 15

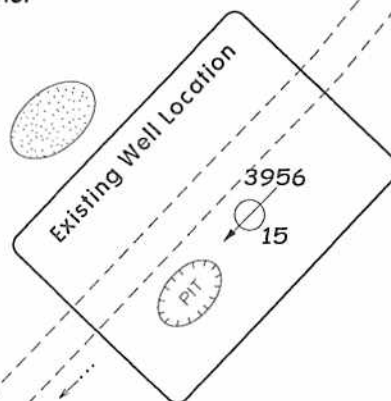
47-033-3956

Frac Permit 9/17/2014

NOTE
REFER TO THE WVDEP
EROSION AND SEDIMENT CONTROL
FIELD MANUAL VER. MAY 2012 FOR
BMPs CONTROLLING EROSION AND
SEDIMENT FROM SOIL-DISTURBING
OPERATIONS.

Use Existing Access Road

David J. Romano
- Surface Owner

**NOTE:**

WELL LOCATION WAS BUILT AND RECLAIMED UNDER DRILLING PERMIT No. 47-033-3956. ONLY MINIMAL EARTHWORK WILL BE REQUIRED FOR PROPOSED WELL WORK. ALL DISTURBED AREAS WILL BE RE-VEGETATED AS PER THE SEEDING PLAN ON FORM WW-9. A SMALL WORKOVER PIT WILL BE CONSTRUCTED TO CONTAIN ANY FLUIDS RECOVERED DURING PROPOSED WELL WORK.

See Page 2 for road

detail to Co. Rd. $\frac{5}{14}$

WILSON WILLIAMS LEASE
J.W. DENNISON LEASE

~0.6 Mi. to SLS 5/14

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Office of Oil & Gas
OCT 06 2014

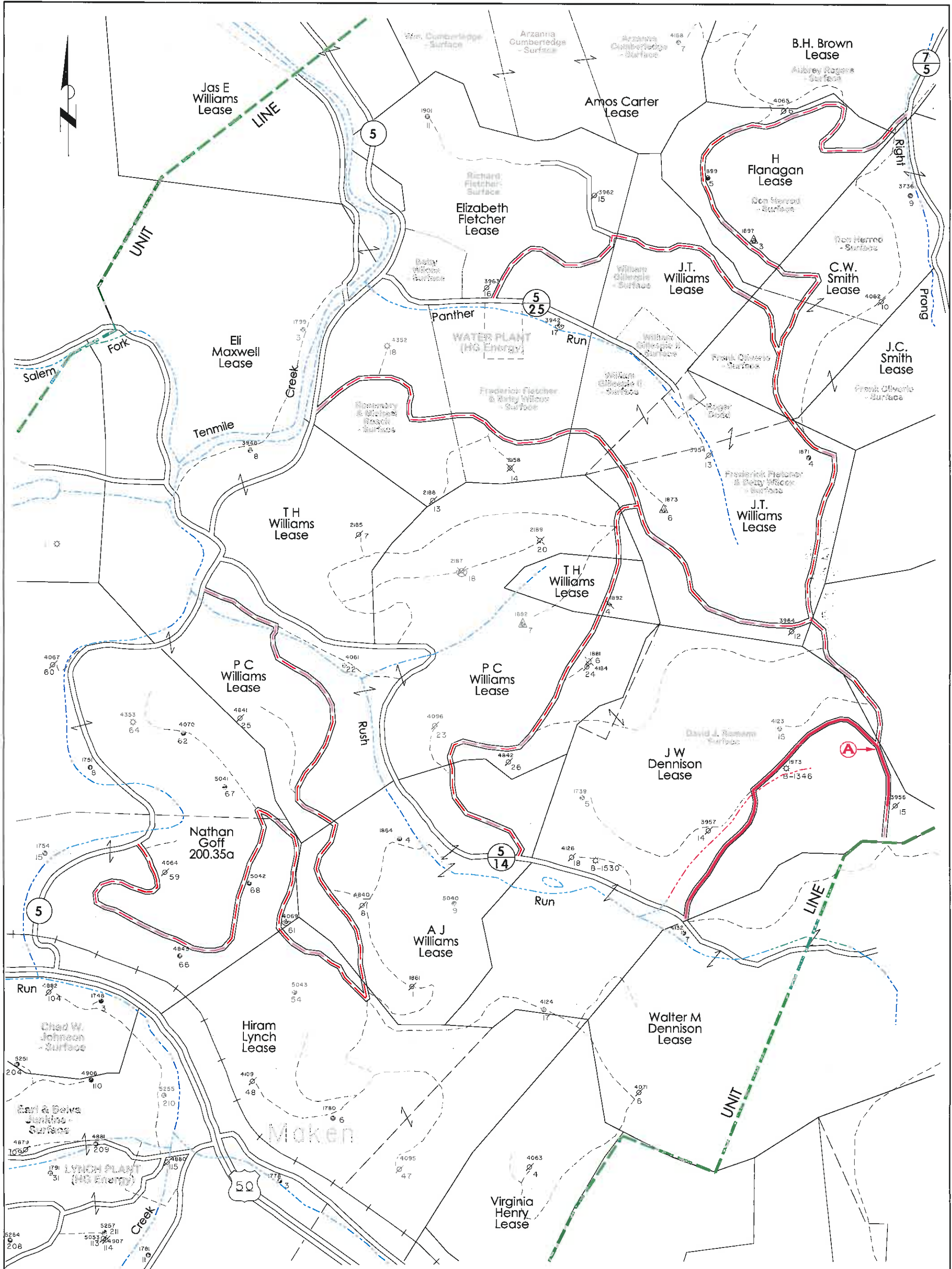
Notes:

- Requested permit is for re-frac of existing well.
- Location and access roads from Co. Rd. 5/25 to the well are existing. Structures shown will be maintained.
- All disturbed areas will be re-vegetated as outlined on Form WW-9.
- Sediment barriers and drainage structures will be maintained.
- All road grades <5% except as noted.

- Existing Culvert

Note: Drawing not to Scale

PAGE 1



WOLF SUMMIT WATERFLOOD

Harrison County, W.Va.

**RECLAMATION PLAN
SHOWING EXISTING ROAD
SYSTEM USED FOR ACCESS
HG ENERGY WELLS.**

J.W. Dennison No.15

NOTES

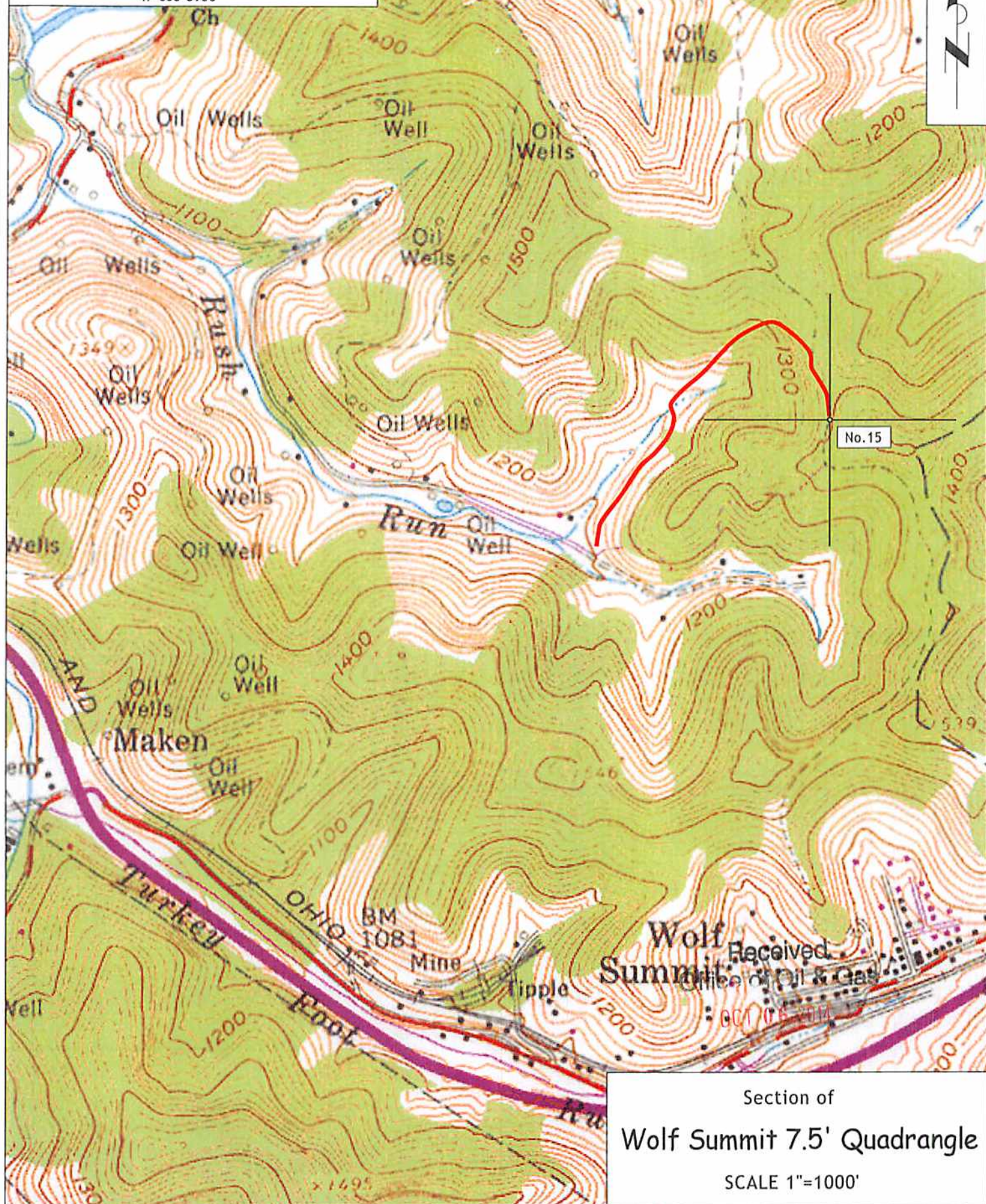
1. REFER TO THE WVDEP EROSION AND SEDIMENTATION CONTROL MANUAL (VER. MAY 20, 2013) FOR BMP'S CONTROLLING EROSION AND SEDIMENTATION FROM ALL SOIL-DISTURBING OPERATIONS.
2. SEE PAGE ONE OF RECLAMATION PLAN FOR DETAILS OF NEW ROAD CONSTRUCTION AND/OR ROAD UPGRADES FROM POINT **A** TO PERMITTED WELL LOCATION.
3. EXISTING WATERFLOOD ACCESS ROADS WILL BE MAINTAINED IN PRESENT CONDITION. THESE ROADS WERE CONSTRUCTED UNDER CONDITIONS SET FORTH IN VARIOUS DRILLING PERMITS ISSUED BY WVDEP-OOG FROM 2003 - 2014 (AS SHOWN). SEE PERMITS ON FILE FOR MORE DETAIL.

LEGEND

- EXISTING WATERFLOOD ROADS TO BE USED.
- OTHER EXISTING MAIN WATERFLOOD ROADS (POSSIBLE ACCESS).
- EXISTING LEASE OR FARM ROADS TO BE UPGRADED.
- NEW ROADS TO BE CONSTRUCTED.
- LOCATION FOR PROPOSED WELLS
- POTENTIAL WATER SUPPLY SOURCE TO BE SAMPLED

SUBJECT WELL
J.W. Dennison No.15

47-033-3956



Section of
Wolf Summit 7.5' Quadrangle

SCALE 1"=1000'

Longitude = 80° 27' 47.7" - 1,390'

LATITUDE 39° 20' 00"

UTM Coordinates
(NAD83)
Meters
N - 4,349,443
E - 546,301

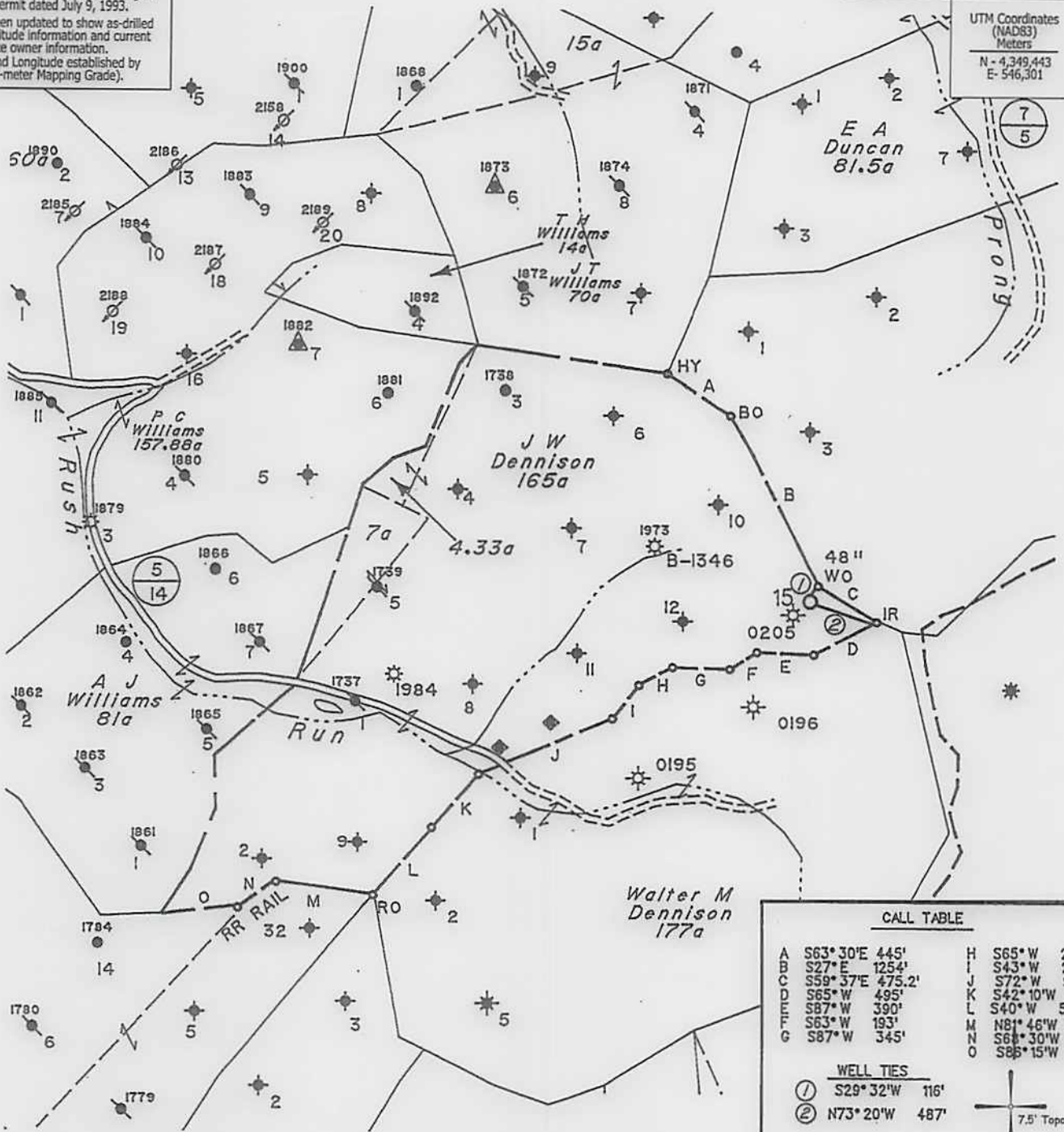
LONGITUDE 80° 27' 30"

14,675'

Latitude = 39° 17' 34.9"

NOTES ON SURVEY

- 1 - The survey shown hereon is from original drilling permit dated July 9, 1993.
- 2 - Plat has been updated to show as-drilled Latitude/Longitude information and current surface owner information.
- 3 - Latitude and Longitude established by DGPS (Sub-meter Mapping Grade).



CALL TABLE

A	S63°30'E	445'	H	S65°W	218'
B	S27°E	1254'	I	S43°W	255'
C	S59°37'E	475.2'	J	S72°W	915'
D	S65°W	495'	K	S42°10'W	586'
E	S87°W	390'	L	S40°W	565'
F	S63°W	193'	M	N81°46'W	651.3'
G	S87°W	345'	N	S68°30'W	279'
			O	S85°15'W	400'

WELL TIES

- ① S29°32'W 116'
② N73°20'W 487'



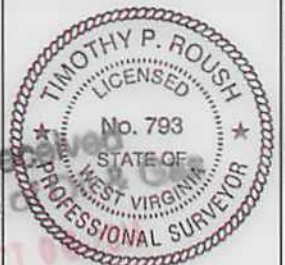
- DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.

FILE NO. _____
MAP NO. N S E W _____
SCALE 1" = 1000'
MINIMUM DEGREE OF
ACCURACY _____
PROVEN SOURCE OF
ELEVATION WVDEP Record Elevation

I THE UNDERSIGNED, HEREBY CERTIFY THAT
THIS PLAT IS CORRECT TO THE BEST OF MY KNOW-
LEDGE AND BELIEF AND SHOWS ALL THE INFORMATION
REQUIRED BY LAW AND THE REGULATIONS ISSUED
AND PRESCRIBED BY THE DEPARTMENT OF MINES.

(SIGNED) _____

TIMOTHY P. ROUSH PS 793



WEST VIRGINIA
Division of Environmental Protection
Office of Oil and Gas
601 57th Street
Charleston, West Virginia 25301

DATE September 17, 2014FARM J.W. Dennison No.15

API WELL NO.

47 - 033 - 03956 W/S

WELL TYPE: OIL _____ GAS _____ LIQUID INJECTION X WASTE DISPOSAL _____
(IF "GAS") PRODUCTION _____ STORAGE _____ DEEP _____ SHALLOW X

LOCATION: ELEVATION 1,409' WATERSHED Rush RunDISTRICT Tenmile COUNTY HarrisonQUADRANGLE Wolf Summit 7.5'SURFACE OWNER David J. Romano ACREAGE 96.5 Ac.OIL & GAS ROYALTY OWNER HG Energy, LLC., et al LEASE ACREAGE 173 Ac.LEASE NO. 27301-50

PROPOSED WORK: DRILL _____ CONVERT _____ DRILL DEEPER _____ REDRILL _____ FRACTURE OR
STIMULATE X PLUG OFF OLD FORMATION _____ PERFORATE NEW
FORMATION _____ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) Frac 5th Sand Formation

PLUG AND ABANDON _____ CLEAN OUT AND REPLUG _____

TARGET FORMATION 5th Sand ESTIMATED DEPTH 2,961'

WELL OPERATOR HG Energy LLC.
ADDRESS 5260 DuPont Road
Parkersburg, WV 26101

DESIGNATED AGENT Diane White
ADDRESS 5260 DuPont Road
Parkersburg, WV 26101

3303956 SW



HG Energy, LLC
5260 Dupont Road
Parkersburg, WV 26101
(304) 420-1100 - Office
(304) 863-3172 - Fax

September 19, 2014

Mr. Jeff McLaughlin
Division of Oil & Gas
601 57th Street
Charleston, West Virginia 25304

CK 2775
WSD

RE: J. W. Dennison No. 15 (47-033-3956)
Tenmile District, Harrison County
West Virginia

Dear Mr. McLaughlin:

Enclosed are Forms WW-3A, WW-3B, WW-9, Mylar of plat, reclamation plan, topo map and copies of the certified mailing receipts for a permit to stimulate the above-captioned liquid injection well. Also enclosed is our check in the amount of \$650.00 to cover the associated permit fees.

Very truly yours,

Diane White

Diane C. White

Enclosures

cc: David Romano – Certified
Wolf Run Mining - Certified
Sam Ward - Inspector

Received
Office of Oil & Gas
OCT 06 2014